

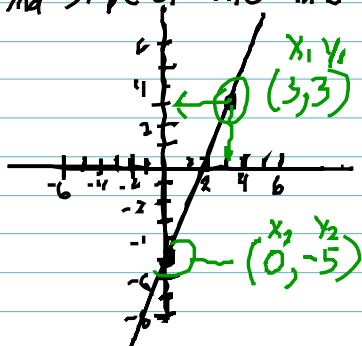
Math 0361

Practice Test 3

1. Find the slope of the line that goes through
 (x_1, y_1) and (x_2, y_2)
 $(9, -8)$ and $(-10, 1)$

$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{1 - (-8)}{-10 - 9} = \boxed{\frac{9}{-19}}$$

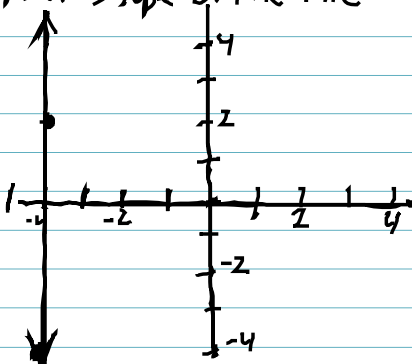
2. Find slope of the line:



$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-5 - 3}{0 - 3} = \frac{-8}{-3}$$

$$\boxed{\frac{8}{3}}$$

3. Find Slope of the line



Vertical Line

Always slope is :

Undefined

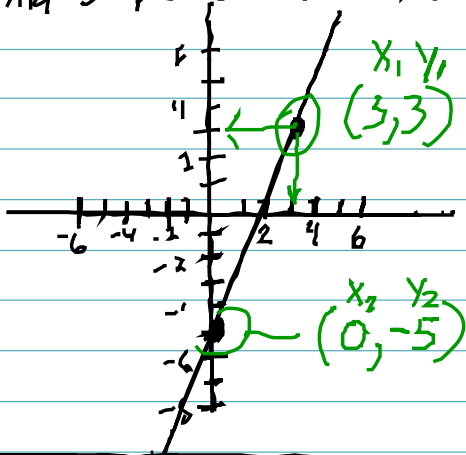
Math 0361

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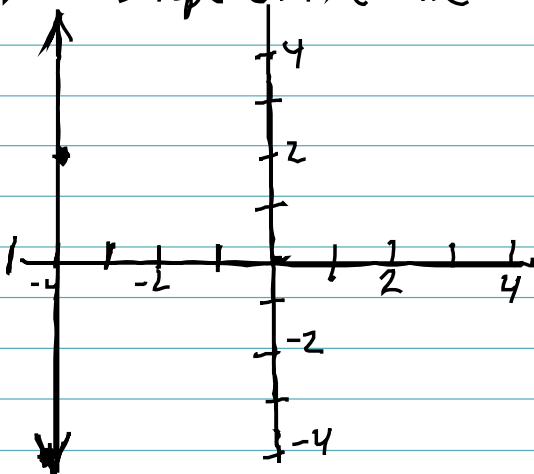
2. Find slope of the line:



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$$\boxed{\frac{8}{3}}$$

3. Find Slope of the line



Vertical Line

Always slope is

Undefined

4. Find slope of the line: $8x + y = 3$

$$\begin{array}{r} -8x \quad -8x \\ \hline \end{array}$$

$$y = -8x + 3$$

$$\text{slope} = -8$$

5. Determine whether the pair of lines are parallel, perpendicular, or neither:

$$\begin{array}{r} 4x = 3y + 1 \\ -1 \quad -1 \\ \hline \end{array}$$

$$\frac{4x-1}{3} = \frac{3y}{3}$$

$$\left(\frac{4}{3}\right)x - \frac{1}{3} = y$$

$$\text{slope} = \frac{4}{3}$$

$$\begin{array}{r} -20x + 15y = 1 \\ +20x \quad +20x \\ \hline \end{array}$$

$$\frac{15y}{15} = \frac{20x+1}{15}$$

$$y = \left(\frac{20}{15}\right)x + \frac{1}{15}$$

$$\text{slope} = \frac{20}{15} \div 5 = \left[\frac{4}{3}\right]$$

Parallel

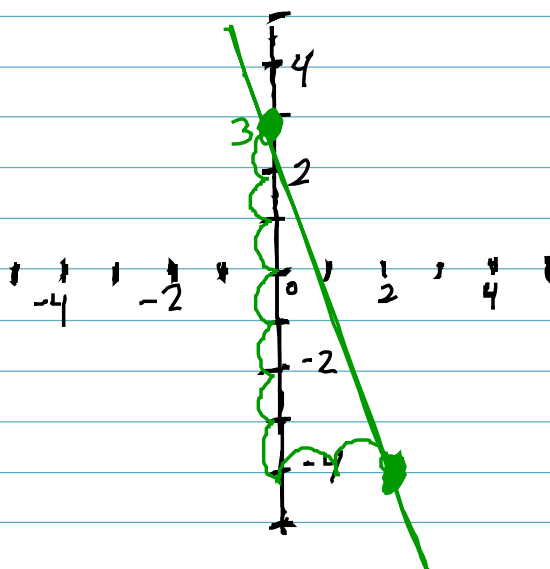
because the slopes are Exactly the Same.

6. Use slope-intercept form to graph the equation

$$y = -\frac{7}{2}x + 3$$

slope = $-\frac{7}{2}$ $\frac{\text{Down } 7}{\text{Right } 2}$

y-intercept = 3
(starting point)



7. Find the equation of the line
Vertical line through $(6, -4)$

$$x = 6$$

8. Perpendicular to $x = 7$ passing through $(6, 6)$
opposite of x

↓

$$y = 6$$

9. Through $(15, 9)$ and $(12, 15)$ $y = mx + b$

1) Find m (slope)

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{15 - 9}{12 - 15}$$

$$= \frac{6}{-3} = \textcircled{-2}$$

2) Find "b"

$$y = mx + b$$

$$9 = -2(15) + b$$

$$9 = -30 + b$$
$$\begin{array}{r} +30 \\ +30 \end{array}$$

$$\boxed{39 = b}$$

3) $y = mx + b$

$$\boxed{y = -2x + 39}$$

10. slope = $\frac{3}{2}$, through $(-6, -14)$ $y = mx + b$

Find b

$$y = mx + b$$

$$-14 = \frac{3}{2}(-6) + b$$

$$-14 = -9 + b$$
$$\begin{array}{r} +9 \\ +9 \end{array}$$

$$\boxed{-5 = b}$$

$$y = \textcircled{m}x + \textcircled{b}$$

$$\boxed{y = \frac{3}{2}x - 5}$$

Simplify:

11. $x^8 x^3 = x^{11}$

Multiply means
Add exponents

12. $(x^{14} y^7)(x^5 y^1)$

$x^{19} y^8$

13. $\left(\frac{2x^3 z^2}{y^3}\right)^3$

$\frac{2^3 (x^3)^3 (z^2)^3}{(y^3)^3}$

$\frac{8x^9 z^6}{y^9}$

14. $\frac{(-2)^5}{(-2)^3}$

Divide means
subtract
exponents

$(-2)^2 = 4$

15. $(-9x)^0$

Anything to
power 0 is
Always 1

$(-9x)^0 = 1$

16. $\left(\frac{1}{2}\right)^{-4}$

change positive
by doing
reciprocal

$\left(\frac{2}{1}\right)^4 = \frac{2^4}{1^4} = \frac{16}{1} = 16$

17.

$$\frac{y^{-8}}{y}$$

Change exponent
positive by moving
down

$$\frac{1}{y^8 y^1}$$

← if nothing left on top
put in 1

$$\boxed{\frac{1}{y^9}}$$

18.

$$\frac{(a^6)^3}{(a^8)^5}$$

$$\frac{a^{18}}{a^{40}} = \boxed{\frac{1}{a^{22}}}$$

19.

$$(-4x^4 y^5)(2x^1 y^2)$$

$$-8x^3 y^{-3}$$

$$= \boxed{\frac{-8x^3}{y^3}}$$

20.

$$\frac{2^{-3} x^{-2}}{2^3 x}$$

$$\frac{1}{2^3 2^3 x^1 x^2} = \boxed{\frac{1}{64x^3}}$$

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